

**REMARKS**

Claims 1-15, 23, 28, and 31-33 are pending in the application.

**Election/Restriction**

The Examiner has required restriction of the invention under 35 U.S.C. § 121 and 35 U.S.C. § 372 to one of the following groups:

Group I - Claims 1, 11-15, 23, 28, 31-33, and 50-65, drawn to a process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway.

Group II - Claims 2-15, 23, 28, 31-33, and 50-65, drawn to a process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated pantothenate biosynthetic pathway and a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway.

Applicants hereby elect, *Group I, claims 1, 11-15, 23, 28, 31-33, and 50-65*, directed to process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway, *with traverse*.

Applicants respectfully submit that Groups I and II are directed to a single inventive concept, this concept being a means of culturing a microorganism having a deregulated MTF biosynthetic pathway for the production of pantothenate. Therefore, Applicants submit that the methods of Group II are integrally related to the methods of Group I. In particular, Applicants submit that the methods of Group II are a subgenus of the genus encompassed by Group I. As such, Group II should be rejoined with Group I. As the M.P.E.P. states:

[i]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions. M.P.E.P. § 803.

Group I and Group II relate to means of enhancing pantothenate production by culturing a microorganism having a deregulated MTF biosynthetic pathway. As such the searches with regard to these inventions would be co-extensive and would not involve a serious burden on the

Examiner.

Furthermore, with respect to the Examiner's assertion that the technical feature shared among Groups I and II (*i.e.*, a process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated MTF biosynthetic pathway) has been taught by Sahm, *et al.* (*Appl. Environ. Microbiol.* (1999) 65:1973) and Jones, *et al.* (*J. Bacteriol.* (1993) 175:2125), Applicants respectfully submit that Sahm, *et al.* and Jones, *et al.*, either alone or in combination, fail to teach or suggest the claimed invention for at least the following reasons.

Claim 1, and claims dependent therefrom, are directed to processes for the enhanced production of pantothenate, comprising culturing ***a microorganism having a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway***, under conditions such that pantothenate production is enhanced. Claim 2, and claims dependent therefrom, are directed to processes for the enhanced production of pantothenate, comprising culturing ***a microorganism having*** a deregulated pantothenate biosynthetic pathway, and ***a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway***, under conditions such that pantothenate production is enhanced.

In contrast, Sahm, *et al.* teach the isolation and cloning of *panB* and *panC* from *C. glutamicum* and methods for the production of pantothenate by overexpression of these genes in combination with an overexpressed *ilvBNCD* operon and a deleted *ilvA* gene. However, Sahm, *et al.* fail to teach or suggest that ***manipulation of the methylenetetrahydrofolate (MTF) biosynthetic pathway results in enhanced production of pantothenate***.

Jones, *et al.* teach the isolation of the *E. coli panB* gene involved in pantothenate biosynthesis. However, there is no teaching or suggestion in Jones, *et al.* that manipulation of the ***methylenetetrahydrofolate (MTF) biosynthetic pathway results in enhanced production of pantothenate***.

Accordingly, Sahm, *et al.* and Jones, *et al.*, either alone or in combination, fail to teach or suggest the claimed invention and, thus, the claims are novel and inventive over Sahm, *et al.* and Jones, *et al.* As neither Sahm *et al.* nor Jones *et al.* teach or suggest the technical feature shared among Groups I and II, Applicants respectfully request that the restriction requirement be reconsidered and withdrawn.

**SUMMARY**

If a telephone conversation with Applicant's Attorney would expedite the prosecution of the above-identified application, the examiner is urged to call the undersigned at (617) 227-7400.

If a fee is due, please charge our Deposit Account No. 12-0080, under Order No. BGI-154US2, from which the undersigned is authorized to draw.

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Respectfully submitted,

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